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U.S. Naval Observatory
Press Release

For Immediate Release

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U.S. NAVAL OBSERVATORY PRESENTS 2008 GILLISS, NEWCOMB, AND SUPERINTENDENT'S AWARDS

In an "all-hands" ceremony held on January 22, 2009, CAPT Steve Warren, Superintendent, U.S. Naval Observatory, bestowed the institution's highest accolades, the Simon Newcomb Award and the Captain James M. Gilliss Award, on two members of its Time Service Department. In addition, CAPT Warren presented the Superintendent's Award to three individuals who rendered exceptional service to the Observatory.

The **Simon Newcomb Award for Research Achievement** was presented to Dr. Christopher Ekstrom, a Supervisory Physicist in the Time Service Department and an internationally recognized expert in atomic physics, in recognition of the successful completion of a 10-year project to design, develop, and construct rubidium atomic fountains for the DoD Master Clock. The project has been eminently successful, and has to date produced two state-of-the-art fountains, of precision a few parts in 10^{16}, and capable of running continuously on a "24/7/365" basis. The rubidium fountains use laser technology to confine and cool a vapor of rubidium atoms to a temperature of about 10^{-6} °K. The atoms are then launched in a ballistic trajectory resembling a fountain. Laser-induced fluorescence is used to measure the frequency, and create a clock, using the atoms' internal states. This is the most precise operational measurement device known to man.

Dr. Ekstrom led an expert team which benefited from his nurturing and professional management style. Through his hard work and leadership, Dr. Ekstrom also earned the deep respect of the staff of the U.S. Naval Observatory.

Dr. Ekstrom serves the DoD, USNO, national and international scientific communities in other ways. He advises GPS Ill on the next generation of atomic clocks. He is frequently asked to give invited talks to groups of physicists. For example, he was asked to give the keynote address at the 2008 Symposium of Frequency Standards and Metrology. He also serves on the Technical Program Committee of the annual Frequency Control Symposium.

The **Captain James M. Gilliss Award for Outstanding Service** was presented to Mr. Warren Walls, Supervisory Engineer, Time Service Department, in recognition of his extraordinary dedication and exemplary service for his work revitalizing the Time Service and USNO infrastructure. Mr. Walls implemented a new operational configuration for the USNO Master Clock systems, which maximizes the precision of the Master Clock, minimizes sensitivity to equipment failures, and maximizes its reliability and performance. Mr. Walls' redesign of the electronic infrastructure was a tour-de-force of detailed planning. The design preparation involved the creation of intricate spreadsheets listing components and their interconnections ensuring flawless comprehensive planning and ultimate success of the effort. The design of the components themselves were be yond state-of-the art, in that Mr. Walls personally researched and set product specifications for manufacturer delivery of parts and materials. The delivery of this complex design was planned equally carefully, through multidimensional Gant charts that grew progressively more detailed as the effort proceeded. The result of Mr. Walls' labors is a new timing infrastructure, stretching from within the new Master Clock Facility all the way to the time-transfer end-points; a structure that will be controlled through a redesigned computer infrastructure that was planned equally carefully to be less vulnerable to external threats or internal breakdowns.

Mr. Walls' efforts have also benefited other departments of the USNO, and contributed to other mission needs of his own Time Service Department. He designed a new local area network to meet the needs of all USNO departments in a consistent manner. He constructed a secure center for videoconferencing. He received praise from the base police force for his assistance in troubleshooting their security badge system. His flat-panel display of the new clock rooms and their operation, originally intended as a monitoring tool, proved so popular that it is now established in the lobbies of two USNO buildings, for the benefit of tourists and visitors. Mr. Walls' efforts have also been integral in the installation of an improved USNO front gate time display and in the design of new environmental chambers and supporting infrastructure for the Alternate Master Clock Facility.

Mr. Walls' dedication to excellence and his personal commitment and support of the Time Service Master Clock systems and USNO infrastructure have significantly enhanced the mission effectiveness of the U.S. Naval Observatory.

The 2008 **Superintendent's Award for Distinguished Service** is shared by three individuals, each of whom contributed significantly to the mission of the U.S. Naval Observatory.

Lieutenant Colonel William Deagan (USSSTRATCOM J844) was recognized for his perseverance, dedication and acute insight into the Joint Milli-Arcsecond Pathfinder Survey (J-MAPS) mission. His strong advocacy for the United States Naval Observatory (USNO) has lead to greater senior level recognition and awareness of the USNO's mission. His contributions and support will benefit USNO and all DoD for many years to come.

Dr. L. Parker Temple, of the National Reconnaissance Office (NRO) Systems Integration and Engineering division, has been a long-term advocate for Precise Timing and Astrometry programs, particularly those applicable to the National Security Space Intelligence Community. His strong advocacy of the J-MAPS mission is greatly appreciated by the USNO.

Dr. Alan Whitney, Massachusetts Institute of Technology (MIT) Haystack Observatory, has distinguished himself as a prominent contributor to the U.S. Naval Observatory's Very Long Baseline Interferometry (VLBI) and Earth orientation programs. As the head of correlator development for both the Mark 3A and Mark 4 correlators, he has been instrumental in supplying the U.S. Naval Observatory with the state-of-the-art correlators that process the VLBl data used to determine Earth orientation.